

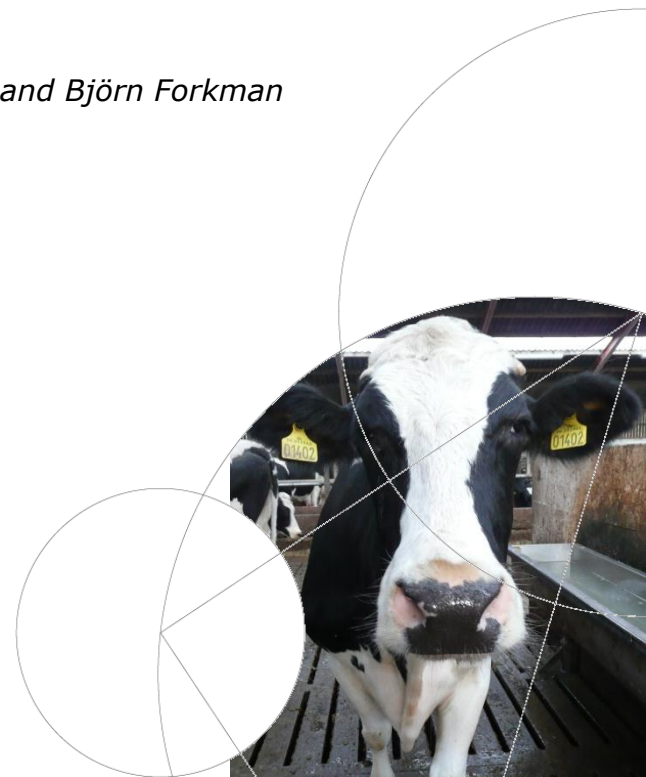


Faculty of Health and Medical Sciences



Danish animal welfare index for dairy cattle and calves

Sine Norlander Andreasen, Anne Marie Michelsen, Marlene Katharina Kirchner and Björn Forkman
Department of Large Animal Sciences



What is an animal welfare index

- An animal welfare assessment evaluates the welfare state of the animals
- An **index** makes it possible to study the development of animal welfare over time



Why create a Danish index

Political motive

Desire to study the development of animal welfare in Denmark, specifically for pigs and cattle ("Veterinærforlig II", 2012)

Scientific approach

Existing schemes

- Welfare Quality® – complete but very time consuming
- Animal Needs Index – mainly resource-based
- Danish Cattle Federation – not well validated



Project facts

Project period

- 2013-2016
- 3 indices
 - I - Register data
 - II - On-farm
 - III - Joined index

Several work packages

- Design of index and indicators to be included
- Decision on sample size and collection of data
- Register data and modelling
- Validation of indexes
- Implementation
- Communication

Main participants

- Danish Veterinary and Food Administration
- University of Copenhagen
- Aarhus University

Ministeriet for Fødevarer, Landbrug og Fiskeri
Fødevestyrelsen



UNIVERSITY OF
COPENHAGEN



AARHUS
UNIVERSITY



What have been done

Animal welfare definition (overall)

Animal welfare are to be assessed taking into account the experience of the animal. The experience of the animal is decisive for whether the welfare is good or poor.

Indicators to be used (Index II)

- Existing protocols
- Workshop with international animal welfare experts
 - Discussion of indicators
- Literature review – **validity, feasibility, reliability**
- Framework – Welfare Quality®
- Primarily animal-based
- Construction of gross-list including more than 55 possible indicators for dairy cattle and more than 37 for dairy calves



Where are we now – Dairy cows, 27 indicators

Principles (WQ)	Indicators	Type
Good Feeding <i>2 indicators</i>	Body condition score	Animal-based
	Water supply	Resource-based
Good Housing <i>15 indicators</i>	Tethering	Animal-based
	Lying outside the lying area	Animal-based
	Time needed to lie down	Animal-based
	Colliding with equipment	Animal-based
	Getting up behaviour	Animal-based
	Bedding material	Resource-based
	Cleanliness of cow	Animal-based
	Total floorage	Resource-based
	Access to sick pen	Resource-based
	Animals per sick pen/sick place	Resource-based
	Access to calving pen	Resource-based
	Animals per calving pen/calving place	Resource-based
	Total floorage – individual sick pen/calving pen	Resource-based
	Cubicles	Resource-based
	Feed bunk space	Resource-based
Good Health <i>8 indicators</i>	Lameness	Animal-based
	Integument alterations	Animal-based
	Overgrown claws	Animal-based
	Milk somatic cell count	Animal-based
	Mortality	Animal-based
	Stillborn	Animal-based
	Pain face	Animal-based
	Prober euthanasia	Animal-based
Appropriate Behaviour <i>2 indicators</i>	Access to cow brush	Resource-based
	Avoidance distance at the feeding table/feed bunk	Animal-based



Where are we now – Dairy calves, 18 indicators

Principles (WQ)	Indicators	Type
Good Feeding <i>3 indicators</i>	Body condition score	Animal-based
	Access to roughage, total mixed ration and/or hay	Resource-based
	Water supply	Resource-based
Good Housing <i>4 indicators</i>	Bedding material	Resource-based
	Cleanliness of calf	Animal-based
	Total floorage	Resource-based
	Tethering	Animal-based
Good Health <i>8 indicators</i>	Calf mortality	Animal-based
	Integument alterations	Animal-based
	Respiratory disorders	Animal-based
	Diarrhea	Animal-based
	Access to sick pens	Resource-based
	NSAIDs post dehorning	Management-based
	Age at dehorning	Management-based
	Prober euthanasia	Animal-based
Appropriate Behaviour <i>3 indicators</i>	Access to other calf/s	Animal-based
	Access to calf brushes	Resource-based
	Access to artificial teat	Resource-based



Example of indicators

Feed bunk space

0: At least one feeding space (70 cm large breed, 65 cm small breed when more than one cow) or headlock per cow

1: Less than one feeding space per cow



Access to artificial teat

This applies to non-weaned calves

0: Feeding by teat (milk automat, loose teat etc.)

1: Feeding by bucket (no teat) but with permanent access to artificial dry teat

2: No access to artificial teat



What are we going to do

- Test index protocols on farm
- Comparison of index protocols to Welfare Quality® protocols
 - Sample size of ~ 60 farms
- Development of training material
- Train assessors



Thank you!

